IN THE SPECIFICATION:

Page 1, replace the 1st and 2nd paragraphs as follows:

1. Field of the Invention

The present invention relates to a photographic system consisting of cameras and printers, wherein the camera records photographic data on a recording medium, e.g. magnetic recording layer on photo filmstrip or a memory card or the like, in association with individual image frames, and the printer controls printing according to the photographic data.

2. Background Arts

In the conventional photographic system, granularity or graininess of a photo print is deteriorated as the degree of enlargement increases. This is because there is a limit in grain size or coarseness of grain on the silver-salt photo film. The same problem occurs in the digital cameras because of resolution limit of the imaging device such as a CCD.

Pages 1-2, replace the bridging paragraph as follows:

The conventional photographic system is not suitable for recording documents because characters are photographed and processed in the same way as other ordinary image frames, and all the frames are printed on photographic paper regardless of whether they include characters or not. Therefore, the contrast and resolution of the characters are inadequate to read, and the photographic paper is not suitable for treating as the document in terms of surface material and size.

Page 2, replace the 1st full paragraph as follows:

To achieve the above objects, a photographic system according to the present invention uses a camera having a fine photo mode. In the fine photo mode, a series of frames are photographed from the same scene, and the camera records data of correlation between the frames of the same series in a data recording medium. When a printer reads the correlation data from the data recording medium, the printer composes a high quality image from image data of the series of frames, and makes a print of the high quality image.

Page 3, change the heading at the bottom of the page to read as follows:

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Pages 5-6, replace the bridging paragraph as follows:

In the divisional photography mode, the lens shifting device 23 moves the imaging lens 22 horizontally and/or vertically in a perpendicular plane to its optical axis so as to concentrate on one division after another, and then the zooming device 24 zooms up the imaging lens 22 to form an image of the one division on the entire imaging surface of the image area sensor 25. The amounts of horizontal and vertical movements and the zooming amount are predetermined for each division according to the number and arrangement of divisions, and are previously written in the ROM 19. Focusing is made division by division, or may be made scene by scene. It is also possible to manually preset a focusing range prior to the shutter release or select a focusing range by well-known focus-locking. The focus-locking is effected by depressing the release

button halfway while locating a subject of an appropriate distance in the center of photographic field, and keeping the release button depressed halfway while framing an appropriate scene structure. In most cases, it is preferable to use the same exposure amount for each division of the same scene. As for extreme back-lit scenes, however, it may be preferable to change the exposure amounts for the individual divisions. In that case, data of the exposure amounts should be recorded as photographic data.

Page 7, replace the 1st full paragraph as follows:

The stepped zooming frames FSZ1 to FSZ4 are sequentially stored in the memory card 16 along with photographic data: data indicating that these frames FSZ1 to FSZ4 are taken in the stepped zooming mode and data of the focal length or image magnification used for each frame FSZ1 to FSZ4. The number of zooming steps or stepped zooming frames obtained upon one shutter release operation may be other than four, e.g. two, three, five, six, etc. Instead of the focus-locking, it is possible to automatically determine a main subject and focus on that main subject by use of a known main subject discrimination device.

Pages 12-13, replace the bridging paragraph as follows:

When the photographic data represents the stepped zooming mode, the image processing section 30 first reads the image data of the first zooming frame FSZ1 from the input image memory 29, and writes it in the working memory 31 in the way as shown in Fig. 3D. As the working memory 31 consists of a greater number of pixels than that used for photographing the

first photographic field SZ1, interpolation is performed. Then, the image data of the second zooming frame FSZ2 is read and processed for pattern-matching with the image data of the first zooming frame FSZ1 by use of data representative of main subject position and magnification ratio of the second zooming frame FSZ2. Thereby, the image data of the second zooming frame FSZ2 takes the place of those image data pieces of the first zooming frame FSZ1 which are taken from the same scene area as the second photographic field SZ2. Next, among the image data of the second zooming frame FSZ2, those image data pieces taken from the same scene area as the third photographic field SZ3 are replaced with the image data of the third zooming frame FSZ3 through the pattern-matching operation. In the same way, the image data of the fourth zooming frame FSZ4 is composed with the image data of the third zooming frame FSZ3 by pattern-matching. In this way, the first to fourth zooming frames FSZ1 to FSZ4 are composed in the way as implied by phantom lines in Fig. 3D. Since the fourth zooming frame FSZ4 is photographed at the highest resolution, the resolution of the composite image is the highest in the main subject area, and lowered toward the peripheral area.

Page 13, replace the 2nd full paragraph as follows:

Instead of using pixel values of those pixels involved in the in-focus areas, a weighted average of the pixels' values of the same position in the respective frames may be used as a pixel value of that position in the composite image. In that case, a largest weighting coefficient should be used for those pixels involved in the in-focus areas.

Page 14, replace the 1st full paragraph as follows:

When the photographic data represents the successive exposure mode, an image of the scene photographed in this mode is composed of average values or middle values of the corresponding pixels of the successive frames. Because of the performance of the imaging device, the original pixel values suffer from noise. By averaging image data of the successively photographed frames, S/N ratio of the image data is reduced. For a distant low brightness subject which cannot be illuminated by a flash light, a better image quality is obtained by the successive exposures. Since it is possible to reduce the amount of illumination light for one exposure, it is possible to avoid over-exposure due to over-illumination. A shorter shutter speed is necessary for one exposure compared with a single exposure even when the subject brightness is low. Therefore, hand-shaking is prevented, and thus the image quality is improved.

Page 15, replace the 1st full paragraph as follows:

The composed or ordinarily processed image data is transferred from the working memory 31 to the frame memory 34. The printer 35 makes a photo-print based on the image data from the frame memory 34.

Page 15, replace the 3rd full paragraph as follows:

It is possible to omit the lens shifting device 23 and frame the respective divisions by hand after entering the number of divisions. In that case, borders between the divisions are

adjusted by pattern-matching on the side of a digital printer. This embodiment is preferable for compactness and simple structure of the camera.

Page 17, replace the 2nd full paragraph as follows:

The code converter 62 receives the number of exposed frames from the system controller 60, and codes the various photographic data for each exposed frame with reference to a coding standard stored in a built-in memory 62a. The coded photographic data is sent to a data writing section 70. The data writing section 70 drives a magnetic writing head during the one-frame advancing after each exposure, to write the coded photographic data on a magnetic recording track 58a of the photo filmstrip 58, as shown in Fig. 8A. A preferable coding method for the photographic data to record on the magnetic track 58a on the photo filmstrip 58 is disclosed in JPA 4-113347, corresponding to U.S. Application No. 08/128,568. The magnetic head 71 may alternatively be driven during the film rewinding into the cassette shell 50 after all available frames of the filmstrip 58 are exposed, to write the photographic data of the respective frames successively. For this embodiment, it is necessary to store the photographic data of all frames in the memory 62a by the time of rewinding.

Page 19, replace the 1st and 2nd paragraphs as follows:

As the position data, inside position data for designating a position inside the frame, outside position data for designating a position outside the frame or backside position data for designating a position backside of the frame may be recorded. The inside position data

designates center, upper right, lower right, upper left or lower left of the print frame. The outside position data designates upper margin, lower margin, right margin or left margin of the print frame. For example, when the backside position is designated by the combination-printing data, the literal image is printed on the backside of the print frame through a backside printer. The backside printer is preferably a conventional one provided for printing the frame number or print-exposure correction data relating to the print frame.

The filmstrip 58 exposed by the above camera is developed and then placed in a film carrier 141 of a printer-processor 140 (see Fig. 9). The film carrier 141 is provided with an imaging aperture 142, a printing aperture 143 and feed roller pairs 144. The film carrier 141 positions the individual frames on the filmstrip 58 in the imaging aperture 142 and then in the printing aperture 143 turn by turn with reference to the perforations 63. The feed roller pairs 144 transport the filmstrip 58 such that a loop is formed between the two apertures 142 and 143.

Page 20, replace the 2nd full paragraph as follows:

The printing light travels through the frame positioned in the printing aperture 143 and is focused through a printing lens 166 and a mirror 167 onto color photographic paper 169 in a printing stage 168 only while a shutter 165 is opened by a shutter driver 165a. Through paper feed roller pairs 170, 171 and 172, the photographic paper 169 is withdrawn from a magazine 173, and is positioned in a letter printing stage 174 and then in the printing stage 168.

Pages 20-21, replace the bridging paragraph as follows:

The light travels through the frame positioned in the imaging aperture 142 and is received on an imaging device 175 for picking up image data of that frame, and is also received on an image scanner 176 which measures three color light values of each pixel of the frame. The image data from the imaging device 175 is stored in an image memory 177. The photometric values from the image scanner 176 are used for calculating characteristic values of each color, such as LATD, maximum and minimum values. Based on the characteristic values, a print-exposure amount operator 179 calculates print-exposure amounts by use of conventional operations. The controller 147 determines based on the print-exposure amounts the positions of the color filters 156 to 158 in the printing light path 159, so the light controller 154 inserts the filters 156 to 158 into the determined positions of the printing light path 159.

Page 21, replace the 1st and 2nd full paragraphs as follows:

When the literal photo data is assigned, the image data stored in the image memory 177 is processed in an image processing section 180 to improve the contrast and resolution of the literal image, by use of one or several methods: edge-enhancement, binarization or conversion into binary image, monochromization or conversion into black-and-white image, and so forth. The processed image data of the literal image is stored in an image buffer 181 along with the literal photo data. It is possible to delete the background and extract data of the literal image. For example, an area containing the letters may be extracted by pattern-matching or other method. By deleting data of remaining areas, data of the literal image can be extracted.

A letter printing device 183 is disposed in the letter printing stage 174. The letter printing device 183 is constituted of a light source unit 184, an LCD panel 185, a printing lens 186 and an LCD driver 187. The LCD driver 187 is connected to the output of the image buffer 181. The light source unit 184 consists of red, green and blue LEDs 184a, 184b and 184c, which illuminate the LCD panel 185 through mirror 184d. The LCD panel 185 is driven by the LCD driver 187 based on the literal image data stored in the image buffer 181, so as to display a negative literal image. A negative literal image is formed onto the photographic paper 169 from the light from the LCD panel 185 through the printing lens 186, so that the literal image is recorded on the photographic paper 169.

Page 22, replace the 3rd paragraph as follows:

The exposed photographic paper 169 is developed by a paper processor 193, and is cut into individual photo prints 194. Designated by 195 is a tray, and 196 and 197 are paper loop reservoirs. Designated by 198 is a paper cutter for cutting an exposed portion of the photographic paper 169 from an unexposed portion when printing is interrupted.

Pages 24-25, replace the bridging paragraph as follows:

As the letter printer 183, it is preferable to use an LCD printer that has conventionally been used for index-printing. The LCD panel 185 may be replaced by a line LCD for printing the literal image line after line. A CRT may be substituted for the LCD panel 185. A laser